The WGN series instruments generate Additive White Gaussian Noise at levels that can be very accurately set in terms of noise power in a specified bandwidth. A ‘smart’ temperature stabilized attenuator with resolution better than 0.016dB provides extremely accurate and repeatable programming of output noise power.

The instrument offers as standard a signal combiner (10dB total signal path attenuation) with low amplitude and phase ripple to allow the user to easily inject a signal and add it to the internally generated noise. Thus different carrier/noise ratios can easily be set. An optional signal path attenuator can be used to set the signal power independently of the noise power. Once a C/N ratio is established, the WGN’s precision noise attenuator can be used to vary the noise power to set new C/N ratios without having to recalibrate.

A front panel display and intuitive keypad allows the instrument to be controlled from the front panel. The display indicates the center frequency, noise power, noise density, bandwidth, signal attenuation, signal step size and noise step size. Up to ten instrument “states” can be stored in onboard non-volatile memory and recalled at a later time, thus allowing canned tests to be simply and efficiently implemented. An IEEE 488.2 interface is also provided for remote operation.

The WGN is modular in construction. Each module is factory calibrated making drop-in field replacements simple. To solve the problem of attenuator accuracy and reliability, dBm has designed self-compensating all solid state attenuators that correct for frequency and power setting variations.

Applications

Typical applications include

- Bit error rate (BER) and SINAD testing
- Component and subsystem linearity characterization
- Wireless link emulation

Features

- Calibrated noise density over entire operating frequency
- Noise power/bandwidth and noise density control
- Solid state noise attenuator with 0.016 dB resolution
- Non-volatile memory for storage/recall of instrument settings
- IEEE-488.2 interface
Specifications

Output type: Calibrated White Gaussian Noise
Crest factor: 15 dB minimum
Attenuation range:
- Noise: 0 to 95 dB
- Signal: 0 to 63 dB (optional)
Attenuation resolution:
- Noise: 0.016 dB
- Signal: 1 dB
Attenuation accuracy: 0.2 dB relative
Power Spectral Density uncertainty: < 0.5 dBm/Hz
Impedance: 50 ohms
VSWR: < 1.5 : 1
Connectors: Type N (female)

Control and interface
Local interface: Front panel keypad & display
Remote interface: IEEE-488.2
Save/Recall: 10 states

Primary power
- Voltage: 90-264 VAC autoranging
- Frequency: 48-66 Hz
- Consumption: 100 VA, maximum
- Fuse: 2A, slow-blow

Ambient operating temp: 0° to 35°C
Dimensions: 2U rack mount
17” W x 3.5” H x 21” D

Ordering Information

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WGN - 1/200</td>
<td>1MHz to 200MHz noise band</td>
</tr>
<tr>
<td>WGN - 5/1005</td>
<td>5MHz to 1005MHz noise band</td>
</tr>
<tr>
<td>WGN - 800/1000</td>
<td>800MHz to 1000MHz noise band</td>
</tr>
<tr>
<td>WGN - 870/1750</td>
<td>870MHz to 1750MHz noise band</td>
</tr>
<tr>
<td>WGN - 800/2400</td>
<td>800MHz to 2400MHz noise band</td>
</tr>
<tr>
<td>WGN - 800/2700</td>
<td>800MHz to 2700MHz noise band</td>
</tr>
<tr>
<td>WGN - 100/3000</td>
<td>100MHz to 3000MHz noise band</td>
</tr>
<tr>
<td>WGN - 3600/4200</td>
<td>3600MHz to 4200MHz noise band</td>
</tr>
</tbody>
</table>

Options
- WGNoptS: Add 63dB signal attenuator
- WGNoptD: Remove signal combiner

Other models available, please consult factory

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rev04/03-1